

REMARKS

In Paragraph No. 3 of the Action, claim 5 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kimura, et al. (JP 2001-353444) ("Kimura") in view of Haensel, et al. (U.S. Patent No. 2,818,394) ("Haensel").

Specifically, the Examiner concedes that Kimura "does not clearly disclose a calcination step in between the metal loading steps." See third full paragraph on page 4 of the Action. Therefore, the Examiner relies on Haensel to teach a method of preparing a platinum-containing composite using separate calcination steps. The Examiner asserts, "it would have been obvious to one of ordinary skill in the art to calcinate the composition after incorporating metal into the molding shape and also after the subsequent impregnation." See page 5 of the Action. Further, the Examiner asserts that it would have been obvious to load in separate steps in view of Haensel since [Haensel] "teaches that impregnating and calcining in discreet steps creates a catalyst of higher activity."

The rejection is traversed. Applicants respectfully submit that the presently claimed invention is not rendered obvious by the combination of Kimura and Haensel because there is no teaching, suggestion, motivation or other reason to combine Haensel with Kimura. Specifically, Haensel is a two-stage supporting method in which platinum is supported on an alumina support followed by calcination and, after that, platinum is supported once again thereon. See column 1, lines 28-34 of Haensel. On the other hand, in the presently claimed invention, platinum is supported on sulfated zirconium hydroxide then pseudoboehmite is mixed therewith, followed by molding, and then after that calcination is carried out. See present claim 5.

Thus, the support which supports platinum is alumina in Haensel, while in the presently claimed invention, it is sulfated zirconium hydroxide. Therefore, the supports are different between the presently claimed invention and that of Haensel.

In addition, there is no description for sulfated zirconium hydroxide in Haensel. Further, there is no description at all even for suggesting that platinum is supported on sulfated zirconium hydroxide in Haensel.

In view of the above, Applicants respectfully submit that the presently claimed invention is not rendered obvious by the combination of Kimura and Haensel, because there is no teaching, suggestion, motivation or other apparent reason to combine Kimura with Haensel.

In addition, Applicants respectfully submit that the presently claimed invention provides unexpectedly superior results. In particular, in view of the following circumstances 1, 2 and 3, Applicants respectfully assert that the Catalyst J of Comparative Example 4 of the presently claimed invention corresponds to the teachings of Kimura.

1) As shown in the following Table below, from the Catalysts E, F, and G of Kimura, it is understood that pore volume, SCS and the proportion occupied by pore volume of 1.4 to 2.1 nm are correlated to the content of alumina.

2) When the properties of the Catalysts J and G are compared, both use alumina as a binder and show nearly the same properties for pore volume and SCS, and accordingly, the content of alumina and the Catalyst J is presumed to be about 20% by weight which is the same as that in Catalyst G.

3) Since the proportion occupied by pore volume of 1.4 to 2.1 nm is determined by the proportion of alumina to zirconium, the pore volume of Catalyst G is presumed to be 31, which is the same as that in the Catalyst G.

		The present invention	Kimura			
		Catalyst J	Catalyst E	Catalyst F	Catalyst G	
Content of Alumina	wt%	—	5	15	20	
Sulfur	wt%	2.2	1.83	1.64	1.54	
Pd	wt%	0.5	0.53	0.48	0.44	
Pt	wt%	0.3	—	—	—	
Total Pore Volume	ml/g	0.21	0.130	0.178	0.202	
SCS	(kg/mm)	0.8 ^{*1}	0.8	0.6	0.8	
Proportion Occupied by Pore Volume of 1.4 to 2.1 nm	(%)	—	60.3	36.2	31.0	

*1: Converted from the data where the unit is kg/2 mm

See Table 2, page 34 and from the last paragraph on page 29 to the first paragraph on page 31 of the present specification.

Thus, the fact that the activity of the Catalyst A of the presently claimed invention is higher than that of Catalyst J, which corresponds to Catalyst G of Kimura, is clearly due to the effect of the preparing steps adopted by the presently claimed invention. This effect is not taught or suggested by Kimura and would not have been predicted or expected by those of ordinary skill in the art based on the description of Kimura. For this additional reason the present invention is patentable over the cited references, taken alone or in combination.

In view of the above, Applicants respectfully submit that the presently claimed invention is not obvious.

Reconsideration and withdrawal of the § 103 obviousness rejection are respectfully requested.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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Respectfully submitted,

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